

REMARKS

Claims 5-19 are pending in the application.

Claims 5-14, 16, and 19 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Kawabuchi et al in view of Richter et al and Satoh. The Examiner maintains the position that Richter is a fair teaching that tertiary amine catalysts have been used in polyisocyanate preparations, which are useful for the production of polyurethane plastics.

Claims 15, 17 and 18 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Kawabuchi et al in view of Richter et al, Ohashi et al and Satoh. The Examiner states that given the teachings of Richter et al of the disadvantages of tin based catalysts, it would have been obvious to one of ordinary skill in the art to select suitable catalysts other than tin compounds, such as the zinc octylate taught by Ohashi et al.

Applicant respectfully traverses the rejections.

The present invention relates to a method of manufacturing a hard disk drive assembly comprising the steps of:

- providing components of a hard disk drive assembly;
- providing an ultraviolet-curing composition having a curable component; and
- fixing or bonding components of said hard disk drive assembly using the ultraviolet-curing composition,

wherein said curable component of said ultraviolet-curing composition is a urethane (meth)acrylate obtained by an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between (1) an isocyanate group of an isocyanate oligomer, which is prepared by using an organic zinc compound or an amine compound as a catalyst in an addition

reaction between an isocyanate group and an active hydrogen; and (2) a hydroxy group of a hydroxyalkyl (meth)acrylate.

The Examiner's interpretation that Richter et al provides a fair teaching concerning the usefulness of tertiary amine catalysts is not reasonably based. The Examiner considers that it would have been obvious to exclude tin compounds overall from the candidate catalyst in light of Richter et al's disclosure dealing with the problems of specific tin compounds. However, since Richter et al teaches improvements in tin compounds, one of ordinary skill in the art would have been motivated to use the improved tin compounds.

In addition, the Examiner appears to ignore Applicant's comments concerning the differences in the reaction route or mode between the present invention and the cited references and also the differences in the catalyst performance required in accordance with the respective reaction routes.

Further, the Examiner does not take into account the fact that the desirable catalyst depends on the intended use or purpose and cannot be determined unconditionally. Thus, the Examiner appears to make a hindsight analysis in combining the teachings of the cited references, which is inappropriate. As previously set forth in the Response filed on July 25, 2005, Richter et al has no disclosure of any of disadvantages, advantages or specific examples of tertiary amines. Richter et al merely refers to tertiary amines as examples of conventionally used catalysts to show a part of the background of the invention. It is evident from Richter et al's disclosure that since Richter et al focuses on organic tin compounds which are, according to Richter et al (col. 1, lines 29-31), particularly valuable catalysts, it discloses disadvantages of active tin compounds such as reduced catalytic activity when stored. Thus, Richter et al does

not teach or suggest that tertiary amines are useful, but merely proposes to use a reaction product of a sulfonyl isocyanate and a specific organic tin catalyst. It is not reasonable to interpret that usefulness is suggested since shortcomings are not mentioned.

With respect to the use of tertiary amine catalysts and organic tin catalysts, in the case where a rapid reaction is required, it is conventional to use an organic tin catalyst because it has higher activity. In particular, Richter et al is directed to a polyurethane resin (having moisture curability or of two component system) having isocyanate group terminals, and the on-site final step (by a user) is a urethane reaction or urea reaction. In such a process, the curing rate and curability are deteriorated unless a highly active catalyst is used. Richter et al points to a disadvantage of organic tin compounds of catalytic activity deterioration during storage. Richter et al does not mention disadvantages of tertiary amines. It is common knowledge in the art that tertiary amines have a lower activity and hence provide a worse on-site working efficiency. Thus, one of ordinary skill in the art would not consider Richter et al as recommending the use of tertiary amines. In fact, none of the Examples uses a tertiary amine.

Referring to the composition used for the present invention, on the other hand, the on-site final step (by a user) is a reaction of (meth)acryloyl groups. According to the present invention, a urethane reaction is carried out within synthesis steps (upon manufacturing oligomers in a factory). Accordingly, a satisfactory reaction is attained even when an amine catalyst or an organic zinc catalyst is used as a catalyst for the urethane reaction.

Therefore, in view of the above, one of ordinary skill in the art would consider the disclosure of Richter et al to be directed to the use of an organic tin catalyst for higher activity. However, in order to avoid the disadvantages of the conventional organic tin catalysts, Richter

et al uses specifically limited organic tin catalysts. Richter et al does not suggest at all that the problem can also be solved by employing tertiary amines.

Even assuming that Richter et al can be interpreted as providing a fair teaching concerning the usefulness of amine catalysts, Richter et al's disclosure is directed to a composition in which the isocyanate addition reaction is utilized at the final reaction stage where the liquid matter changes to a solid. Contrarily, the final reaction stage in the present invention where the liquid matter changes to a solid involves a (meth)acrylate group. In the present invention, the isocyanate addition reaction has been completed at the time when oligomers are synthesized in a factory. Thus, the reaction route and mode are completely different.

Furthermore, the intended use is very different. Therefore, one of ordinary skill in the art would not have expected that the catalyst of Richter et al would give favorable results as the catalyst for the synthesis stage of urethane (meth)acrylate for a hard disk drive.

As the disadvantages of conventional tin catalysts, Richter et al teaches that tin compounds are sensitive to hydrolysis and they would gradually lose some of their catalytic activity in the presence of moisture. The product (i. e., a polyisocyanate preparation adhesive) must be stored in some container after manufacture in the factory until it is to be used by the user. If the catalytic activity of the tin catalyst is reduced during this time period, this may cause defects in the products. In light of these circumstances, Richter et al proposes tin catalysts of a type that do not lose their catalytic activity due to moisture (hereinafter referred to as Richter et al's catalysts).

Richter et al merely mentions amines as conventional catalysts in addition to tin compounds. Richter et al does not teach the performance, (dis)advantages or advantages of amine catalysts. If the problems addressed by Richter et al were solved by an amine catalyst, the use of an amine catalyst would have been sufficient to meet Richter et al's objectives and there would have been no need to develop Richter et al's catalyst. Therefore, it is a natural and reasonable interpretation of Richter et al's disclosure that Richter et al teaches the preference of Richter et al's catalysts. One of ordinary skill in the art would not have interpreted Richter et al's disclosure as teaching that the problems addressed therein could be solved by amine compounds, while tin compounds would involve disadvantages.

Richter et al's catalysts take part in the final stage reaction which is an isocyanate addition reaction as mentioned above. Hence, the catalysts affect the curing performance of the product. Accordingly, the catalyst should be selected or designed in accordance with such circumstances.

In the present invention, on the other hand, the isocyanate reaction is completed at the oligomer production stage carried out in a factory as mentioned above. Therefore, the disadvantage of tin catalysts pointed out by Richter et al, i. e., reduction in catalytic activity during storage due to moisture, does not give rise to any problem in the present invention. The problem addressed in the present invention is that tin compounds, when used for hard disk drives, generate outgases which may damage the recording surface, and hence tin catalysts are not suitable.

Thus, the disadvantages of tin catalysts referred to in Richter et al and the unsuitability of tin catalysts in the present invention are very different.

The Office Action states on page 2, lines 17-18, that Ohashi et al teaches the suitability of zinc octylate as a catalyst in similar urethane based adhesives. The above argument also applies to Ohashi et al. That is, Ohashi et al is directed to a composition in which the final reaction is an isocyanate addition reaction (urea reaction). The Examiner takes the position that the use of zinc compounds is obvious in view of the Ohashi et al's disclosure which discloses tin, amine and zinc. However, as previously pointed out, the selection of a catalyst cannot be made without considering the compounds to be used (in other words, the reaction for which the catalyst is used), the curing conditions to be employed and the intended use. Therefore, the Examiner's assertion that the organic zinc compound embodiment is obvious is quite unreasonable.

Even assuming that Richter et al denies the use of tin catalysts, there is no basis to conclude that the selection of an organic zinc compound as disclosed in Ohashi et al is obvious. If such logic is considered reasonable, the use of each and every catalyst disclosed in Attachment A submitted with the Response filed on July 25, 2005 would be considered as obvious. Thus, in effect, the Examiner is suggesting it would have been obvious to try various catalysts so as to determine the optimum catalyst. However, Applicant respectfully submits that the applicable law is to the contrary. The law states that it is not a valid basis for rejecting a claim under 35 U.S.C. § 103(a) that it was obvious to try variations to find optimum conditions. *See, e.g., In re Sigco*, 36 USPQ2d 1380, 1382 (Fed. Cir. 1995) (citing *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1521, 1532 (Fed. Cir. 1988) (rejecting the "obvious to try" standard)); *In re Deuel*, 34 USPQ2d 1210, 1216 (Fed. Cir. 1995) ("obvious to try" has long been held not to constitute obviousness").

Thus, considering the above arguments and the arguments of record, which are incorporated herein by reference, even if one were to combine the teachings of Richter et al and Kawabuchi et al, the present invention would not have been achieved. Ohashi et al and Satoh et al also fail to remedy the deficiencies of Richter et al and Kawabuchi et al. Thus, the prior art does not render the claimed invention obvious.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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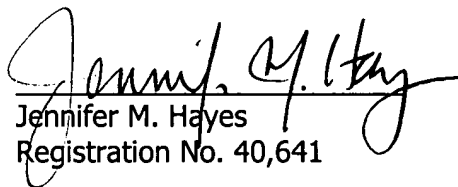
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